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## LISTERED CORN.

Its Cultivation and Advantages.

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**FOR THE CULTIVATION** of listed corn there have been a great many specially-constructed tools brought out, those of the sled type predominating. These were made narrow, the runner being not more than 10 or 12 inches apart, so that both would run in the same furrow at the same time. To their sides were attached knives which in passing cut into the sides of the adjoining ridges, while the cross pieces, extending perhaps two feet on either side, scrape the tops of the ridges. These and other special tools are used to a limited extent, but are gaining ground very slowly, if at all. Our farmers seem to think that

A GOOD TWO-HORSE CULTIVATOR and a short-tooth harrow are all the really necessary tools for thorough cultivation; at least, they are the ones

most used. Of course, they must be properly constructed, adjusted, and handled to give best results.

It was formerly the quite general custom to run the plank drag over the field soon after planting, to pulverize the soil and flatten the crests of the ridges; but this practice has been to a great extent superseded by that of harrowing, while some good farmers use neither harrow nor plank, preferring to handle all of the soil with the cultivator. Harrowing is usually done soon after the plants appear.

This is a heroic treatment, and the young plants are sometimes buried almost out of sight, but with our bright sunshine and light, warm soil they soon come up smiling. The disk harrow is also coming into use for this purpose and is well spoken of by those who have tried it.

I presume that every farmer who ever practiced listing has, like the writer, a very distinct recollection of

his first experience

A team unused to the work invariably persists in walking in the furrows rather

than upon the ridges, as they should do. Then, the soil just as persistently rolls down the slope, almost filling the furrow, while the plow handles seem determined to lock arms across the row. Thus it requires much experience and many experiments to get things so adjusted that they will

"WORK TOGETHER FOR GOOD," and in the meantime there is too often considerable of the bad, both in work and word. When team and plowman, come to thoroughly understand their business, however, it is no more difficult to "tend" listed, than no, planted corn.

**THE INVERTED TROUGH.** A few years ago the inverted trough, made of pine boards (Fig. 1), was almost universally used at the first plowing, being tied to the cultivator in such a way that it was drawn along in the trench, over the row, and directly between the shovels, so that the soil

fell upon the trough and at its passage settled gently about the plants. In using the trough the front shovel on either side is removed, the shanks resting against the sides of the trough.

**WEED KILLING.** The best and most effective weed killing can be done when weeds are small—the smaller the better. Hence the entire surface between the rows should be operated upon at first working, as the above plan left only two shovels to do the work; many have discarded the trough and use instead large shields made by riveting pieces of heavy sheet iron about 12x28 inches in size onto the regular small shields. These are

used in connection with four shovels, the inside ones being set low to cut the side of the ridge, while the rear one works on top. Fig. 2 will serve to give the reader some idea of the size and position of these shields. They can be so adjusted as to high that the fine soil will run under them about the plants, while the row is always in plain sight of the plowman.

GROWTH.

Fig. 3 represents a row just up, one after harrowing and one after first cultivation.

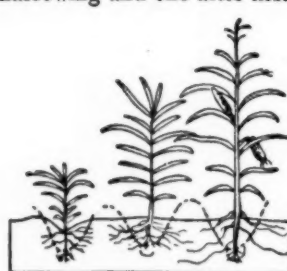


FIG. 4.

At the second plowing we have used the regular outfit of four shovels, setting the shields as high as the size of the corn would permit, and when "laying by" the mold board shovels, which do thorough work without running very deep or close to the row. At Fig. 4 we have a row after second working,

and another of full grown corn, with the roots deep down in the soil. In plowing a piece of stalk ground recently that had been listed last season, we found the stalks so deep set that the plow running six inches deep made a great cracking among the roots. Fig. 5 shows one of these roots picked up at random and split through the center. The distance from surface of ground at A to bottom of stalk at B is six inches.

The advocates of the listing method claim, first, that they can grow more and

better corn on more acres, and do it easier and cheaper, by listing than in any other way.

Second, the crop is more readily kept clean, for the ridges are being gradually worked down as the corn grows up, allowing of reasonably deep and thorough cultivation without mutilating the roots or unduly ridging the land.

Third, the brace or "spur" roots start at or near the surface of the ground, where they at once take a hold in the soil and assist in supporting the plant. Thus, they claim that listed corn endures storm and drouth better than top planting.

Fourth, listing allows of drilling the seed one grain in a place, and yet gives every facility for keeping the land clean and mellow; and as corn planted by single grains produces larger and more uniform ears, the yield is greater and the quality better.

Not every part of Kansas is as well adapted to the listing process, or indeed to the production of corn by any process, as are the northeastern counties. Let it not be understood that we are located in an arid region, where methods other than listing do not succeed, or that the lister is looked upon with universal favor. Some among our best farmers prefer to plow and top-plant in regular Eastern style. Among these we might mention Mr. J. M. Funk, an AMERICAN FARMER subscriber, whose fine farm lies directly across the road from where we write. He is one of our most successful farmers, though a lister stored in his tool-house has not been used for years. Old settlers who, like Mr. Funk, have been here for 20 years and made farming a success, can give the tenderfoot practical points on prairie farming worth a full volume of fine-spun theories drawn from Eastern experience.

Again, the lister is not adapted to sod ground, and as our farmers are beginning to realize that in order to maintain the fertility of the soil they must diversify their crops, growing more tame grass and clover, the listing process is perhaps as popular to-day as it ever be.

Many of us fail, I think, to draw the line between the judicious use and the abuse of the listing habit. We cast all our cornfield cares upon the lister, bite off more than we can chew, because it is so easy to rush in a large acreage in the Spring when the ground is clean and soft, forgetting or ignoring the fact that thorough preparation of the soil is an essential requirement of good farming, whatever methods we may adopt.

## OEDEMA OF APPLE TREES.

Result of Too Severe Pruning.

During the month of July specimens of diseased apple twigs were received from Mr. E. A. Crow, of New York City. The soft outer tissue of the limbs was in a state of decay and occupied by a fungus, some species of *Fusarium*, which resembled *F. arcuatum* B. & C., which was described from the bark of *Pirus malus* in South Carolina. Mr. Crow had supposed this fungus to be the cause of the trouble and had tried the use of the Bordeaux mixture after having scraped off the bark from the diseased places. Since so many of the species of the genus *Fusarium* grow only in tissues which have been injured by some other agent and all of the material which was first received was in such an advanced state of decay, I requested Mr. Crow to send me some fresh specimens which would represent the entire progress of the trouble from its inception. From this material, which was received in good condition, the external peculiarities of the disease may be described as follows:

Minute elevations appear on the surface of the branches or trunks which gradually increase in size from one-eighth to one-fourth of an inch long and nearly as wide. They are usually quite close together and frequently by increase in size become confluent when a large number extend over quite a large surface and appear as one of very irregular form. These elevations present the appearance of blisters and they are well shown in Fig. 1, which is from a photograph of three of the specimens received. Two of them show the appearance of the twigs when the blisters are most prominent, while one of them shows the collapsed condition of the tissues which always results after the tissues are broken down from decay.

Microscopic sections through the parts of the twigs where the trouble is recent shows that no fungus is present, and in fact there is no ground for the casual connection of any parasitic organism. Immediately beneath the periderm the young phellogen tissue at the points of the blisters is seen to be very greatly elongated radially. This radial elongation of the phellogen causes the periderm to be raised in the form of a blister. Beside the radial elongation of the phellogen cells they are also very much distended. This distension continues until the cell walls are no longer able to stretch, because they become so thin that they break and the cells collapse. This collapse of the phellogen cells causes the collapse of the blisters, and in drying these affected areas are depressed below the normal surface of the twig. Also, the dying tissue forms a nidus for such saprophytic fungi as the *Fusarium* which was in many cases present. This drooping swelling of the tissues is of the same nature as that which occurs sometimes with tomatoes when grown under conditions which favor rapid and continuous root absorption, and at the same time hinder transpiration or growth. A thorough study of this trouble with the tomato was made last



FIG. 1.—OEDEMA OF APPLE TREES.

Winter by the author and published in Bulletin No. 53, May, 1893, of the Cornell Station. To this the reader is referred for a full discussion of the unequal operation of the physiological laws which induce the trouble, and of the fibrology.

In the case of the tomato edema the unequal operation of the physiological laws was due to certain unfavorable conditions of greenhouse lighting and heating. This would not apply to the case of the apple trees which were grown outdoors. But since the trouble was like in kind the cause would probably be found in some condition of soil, cultivation, or pruning of the trees, which would favor root absorption and hinder transpiration or growth at a sufficient number of points on the tree to take charge of all the water which the roots

absorbed. Inquiry of the owner developed the fact that the soil in the young orchard was very fertile and well worked, and that the conditions so far as soil was concerned were very favorable for rapid root absorption and growth. In fact, the trees grew very luxuriantly and were the marvel of the neighborhood. But during the Winter and early Spring they were very severely pruned. According to the owner they were pruned very close, leaving only the main limbs and twigs and a few secondaries, and the new growth was cut back one-third. This left but few growing points. When root absorption and growth began in the

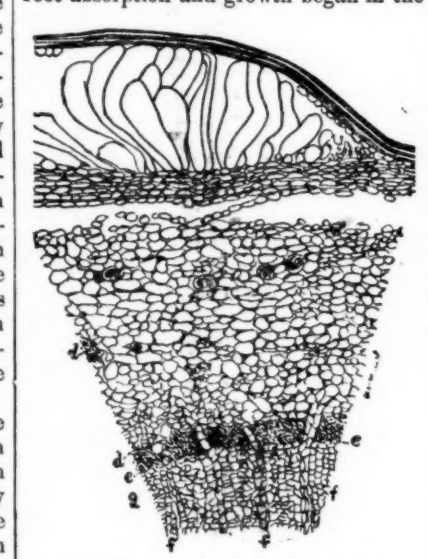


FIG. 2.—OEDEMA OF APPLE TREES.

Spring, there being no leaves to discharge the excess of water through transpiration, the few growing points could not dispose of the excess. Consequently the thin walled phellogen tissue could not stand the strain. Fig. 2 represents a portion of a cross section of one of the blisters; a, periderm; b, phellogen; c, inner layer of cells developed from phellogen; d, bast fibers; e, cambium; f, medullary rays. Scale=1 mm.; object magnified 10 times more than the scale. Drawn with aid of camera lucida.

The cause being known the remedy would be suggested to all, that too vigorous growth should be guarded against and too severe pruning should not be indulged in.—Prof. Geo. F. ATKINSON, New York Experiment Station.

**Grapes in Pennsylvania.**

As to varieties, the Concord continues to be the most popular grape in Pennsylvania, and in some localities it is grown to the exclusion of all other kinds. A number of the newer varieties have, however, become very popular and are proving profitable to raise. Among these may be particularly mentioned the Niagara, Moore's Early, Moore's Diamond, Salem, Worden, Woodruff Red, and Wyoming Red. The Niagara has been found to succeed in almost any locality providing it is bagged. It seems to require this treatment more than any other grape. In regard to the Woodruff Red, Secretary Engle reported: "One of the most promising new varieties fruited this year was Woodruff Red. Although not first-class in quality, it is a beautiful grape, keeps well and holds its foliage to the last." Casper Hiller, of Lancaster County, marks Woodruff Red quite high, and says that the Eaton and Woodruff Red are both very showy and fairly good, and consequently they bring the highest prices. Dr. Groff, of Lewisburg, says his Moore's Early and Niagara grapes were "as fine as fine could be." He intends planting 100 Moore's Early in the Spring. Prof. Heiges, of York, has 46 varieties of grapes fruiting, and mentions in particular Woodruff Red, Wyoming Red, and Moore's Diamond as having been very superior.

R. M. Welles, of Towanda, gives his experience in regard to varieties during the season of 1893, as follows: "Woodruff Red is a poor bearer. Empire State, Moore's Early, Niagara, Worden, Delaware, Brighton, and Concord are all good croppers. The Lady and Jessica do well, but are not reliable. Jefferson is a good grape and cropper but too late."

E. C. Briner, of Dauphin County, relates his experience as follows: "Concord, Worden, Moore's Early, Cottage, Eaton, Jewell, and Niagara were fine. Daisy is early. Telegraph and Champion are no good. Empire State is not satisfactory. Pocklington and Brighton are poor."

W. B. K. Johnson, of Lehigh, who has a number of new varieties in cultivation, says: "Wyoming Red is the best red. Eaton is improving. Woodruff Red is good. Meyer doubtful." As to other new varieties he prefers to report after another year's trial.

Spraying or bagging was essential to insure success. M. T. Donnay, one of Berks County's most successful grape growers, has found that he cannot raise grapes successfully without resorting to spraying or bagging. Many other growers in the State give this as their experience.

## SPRING PREPARATIONS.

Systematic Ways to Plant Farm Crops.

**EDITOR AMERICAN FARMER:** Spring finds me busy. My head and heart are both full of hope for the coming year. We have commenced our Spring plowing. This week I hope to finish plowing between 30 and 40 acres of crop land with two teams. We can nicely plow two acres per day in good weather and while land is in such good condition. This done we are then masters of the situation on our farm. First comes the seed bed fitting for oats and early garden. Our oat ground is made fine as an onion bed; no lack of tillage should ever happen. It is not half as important to mud them in early as it is to have perfect tillage and do the work to perfection. I aim for a hundred bushel piece per acre every year of good, nice, heavy, white oats. I have already had a crop of over 83 bushels per acre, and I shall keep shooting at my mark until I hit my bull's-eye.

On my soil one and one-half bushels of seed oats per acre drilled each way, making three bushels of seed per acre, is none too much. It spreads the oat plants so evenly and nicely, it most completely shuts out all chance for barn grass or foul weeds to grow. I use manure and fertilizers both in abundance when needed, and grow my oats just as large as they can be made to stand up. The harvester has a mouthful every moment of its work, and I oftentimes clog the separator elevator with oats if they do not go slow in feeding the machine when thrashing time comes.

**POTATOES.**

Next we fit our potato ground and usually plant from 5 to 10 acres of them. This needs the best of tillage also, and, further, needs a good, heavy, red clover sod to feed the growing tubers while decomposition and transformation into plant food is going on among the up-turned roots of clover. I like clover sod manure best for potatoes. You then have no scabby, worm eaten crop for stock feed or merchants to growl about or consumers to throw away from the washpan when fitting them to cook. I have tried one eye planting and two eye planting, but I find with moderate sized potatoes, the whole thing gives me a hill of good, thrifty, strong growing stalks, and they keep ahead of bug destruction. I think from 30 to 36 inches apart between rows is well, according to richness of soil, and potatoes dropped about 18 inches apart. At digging time there is no trouble to find a big pile of large, nice tubers in each hill.

We aim to do all the cultivating and hoeing we can before planting the seed, with a diamond seed tooth cultivating harrow, as we can then go over 10 acres per day and kill millions of weed plants every 10 hours in this manner. Remember, when a weed seed sprouts and is once killed that's the end of that chap and no resurrection will follow; therefore, it is good policy to kill as many before and after planting as possible, and never let foul stuff and potatoes try to make a crop on the same land at the same time.

No land on earth will carry a double crop and at the same time make good potatoes. Level cultivation, or nearly so, is best for potatoes, and also sandy or gravelly soils. A cultivator with shovels, for a good covering and hoeing of the tubers and stalks, is needed the last time; but do not sacrifice the rainfall of July and August, when the growing tubers need it so badly, by deep shoveling between the rows. Oh, what a sad mistake lots of you make in this direction, and raise marbles instead of potatoes. Do as I advise, and you can rest, when planting and tillage has been perfect, and hope and expect that mother earth will reward your effort with 200 bushels or more per acre, and will be as safe in so doing as in any of the chances we take in human life. Then by using one of the best potato diggers in market, that does not put a hole through almost every good, large potato, or cut a bad scar on them, your crop will sell for five cents a bushel more, and you will be a happier man.

There is money in potatoes. Mine did not cost me 20 cents per bushel last year, and I got 80 cents per bushel for them in market. But the last and most important crop on the farm for me is my ensilage crop, because I keep a Winter dairy and need the richest and best producing milk food on earth. I also have the silos in which to store the crop, and by so doing I save all cold fingers in husking time every Fall, all cartage of the crop to the grist mill in Winter time, and all miller's toll besides.

## CORN.

The corn ground I am plowing to-day will be most everlastingly scratched with the fine cultivating harrow until from the middle of next month to the first of June, and I shall aim, as soon as hot weather comes, to sprout my weed seed and then kill them. I can do this easily at the rate of 10 acres per day with one team and as often as once a week; the weed crop will die if it is my deal.

When warm weather comes to stay I plant my corn. There is no arbitrary rule that can be given for correct distance to plant corn apart, for the reason that the conditions vary all over the country. The Sunny South in many places needs about five feet space between the rows of corn, and the stalks from two to four feet apart; while up in Maine and the colder lands three feet apart, and three or four stalks in a hill, will do as well. So for the intervening space, actual field trial on every man's own farm is needed to ascertain the exact space to plant his corn. When this has once been found, then follow that for your rule of life, and that will be perfection for your farm.

I use the large white corn of the South for my ensilage crop, and plant in rows 3 feet 10 inches apart, and kernels every 12 inches. This will give the largest yield per acre of fully-matured corn on my farm. I give shallow cultivation and level cultivation. You must never cut off the brace roots or feed roots to growing corn, for every time you do the whole business of the plant will stop and stand still until new feed roots are grown. Neither must you pile dirt upon the brace roots of the corn plants, for if you do you make it mad, and it is going to stand still until it grows a new set of them just above the ground every time, because it knows better than you do where to put them; but give good, deep, rich soil, with thorough tillage and shallow cultivation.

Just shave off the weeds below the surface of the soil and above the roots, and you can then grow to perfection the biggest possible crop for your own farm. The manufacturer who will persist in manufacturing cultivators to give deep cultivation to growing crops of corn ought to be severely punished for enabling any farmer to commit such silly financial suicide upon a growing crop of corn.

Later you may hear what this work has to do with the dairy. My mind is full of its importance, because it is what we are doing on our own farm to-day.—HENRY TALCOTT.

**A Maryland Farmer.**

**EDITOR AMERICAN FARMER:** I cannot agree with your sentiments that the farmers need protection. If our business will not thrive without taxing the consumers of the country for our benefit, let us go to the wall. We are not paupers that we should ask the Government for aid, although under the Republican rule they have brought us to a very low ebb. The Republican party have robbed the widow and orphans of their property, and, though I am not a believer in slavery, my mother, a widow, in the State of Maryland, never in rebellion, had her property taken from her, without compensation, by the Republican party, although acknowledged as property by the United States Government. How the negro came to this country I am unable to say; it is said that the Yanks sold them to the Southern people. However, you must acknowledge that slavery was not an injury to the negro race. Would there be any in this country to-day if it had not been for slavery? And being in contact with the whites, has it not given them more civilization than they could have gotten by any other means? Therefore it must have been a benefit to them, although I believe it would have been better otherwise for the country. Have not the Republicans since continued to rob the consumers of the country under the so-called protection? Have they not given the pauper industries the chance to accumulate all the money in a few hands, to the detriment of the many? And are they not still crying for more, although their pet manufacturer (Carnegie) with his \$200,000,000, says he is satisfied with the Wilson Bill? If the manufacturer pays his labor in accordance with what he makes, how is it that the farmer has to pay the same price for his labor when his wheat brings 65 cents and corn 42 cents, that he would have to pay if he got \$1 for his wheat or 60 cents for his corn? Is not all this talk of the politician simply to get the labor vote?—JOHN K. CAULK, Trappe, Md.

It is estimated that last year 1,285,000,000 bananas were consumed in the United States alone. The remains of a Roman watergate have been unearthed at Nimes. There are two openings of 13 feet span.

## SPRING OF 1894.

Some Pertinent Observations by an Old Hand.

**EDITOR AMERICAN FARMER:** Never before in the history of this country have so many of our citizens taken refuge upon the farm. All of the vacant land adjacent to our cities is this Spring being utilized for little farms to be worked by men, in many instances, who have never in their lives farmed land before. The terrible conditions of labor all over this alternative upon them, and it is the wisest course they can pursue. Every city laborer should, if out of employment, get himself out of the city and onto a piece of land, whereby he can raise provisions for his family and keep them above want for food until this Administration comes to its senses. The people of this Nation never wanted a chance to vote so bad as they do now. Men, women, and children would to-day exercise the right of suffrage with a vengeance that never characterized a National election before. It is probable many mistakes will be made by these new natives upon the farms. Since December last the trades of city property for farm lands has been a deluge, and its effect cannot help but be felt next harvest. The prudent, old time farmer will hedge this Spring to meet the exigencies of the hour. The main crops, like potatoes and corn, will be largely overdone. The poultry business and family pig business will be pushed for all there is in it. The old roosters will be compelled to lay eggs or render other valuable service, or die upon the block. More producers and fewer consumers mean that only the rich ones left at the city homes will buy food. These good people cannot be tempted to eat hearty except of luxuries; and of this our farmers must be content. We must have the choicest fruits and garden truck possible to be raised, our farming must more than ever consist of appetizing and delicious foods. The dairy product, which is my farm hope, must be perfect. The milk we sell must be pure.

Already has a decline of price overtaken us, which must be met by lessened cost of production rather than increased production. Our American cheese has become so debased by fraud and skim-milk cheese that it has nearly ruined the sale and consumption of this healthy and highly nutritious food. We must halt in our mad career and turn over a new leaf, and hereafter not manufacture or allow to be sold any cheese upon our markets but genuine full-cream cheese. The Chicago fraud-filled cheese, made up of doubtful fats and grease from every quarter but honest food, has so disgusted the taste of our American people that it will now require herculean effort to change this order of things and build up a desire and love for honest, healthful food, pure-made from the good old cow.

The National Dairy Congress lately organized in Cleveland, O., has taken upon itself the commencement of this important work. It is to be hoped that honest manufacturers and honest dealers may be made so prominent before consumers that a public sentiment can be created so thoroughly that no sale of counterfeit or skim-milk cheese can be made in the United States. Cheese that is rich in butter fat is a great aid to human digestion. It is healthful and nutritious, while on the contrary that cheese which has been robbed of even the slightest portion of its true butter fat is by such degree made indigestible and unfit food for man.

There is nothing that should so concern our American people as the purity of their food. We need National legislation upon this subject, and laws too strict or too severe for punishment of vile food products cannot be made. The great dairy belt of this Nation now covers the entire surface of our land. Splendid full-cream cheese is now being made at the Experiment Station farms in Georgia, and was placed beside the same made in Ohio and Vermont at the late National Dairy Congress meeting. It shows most conclusively that silo and ensilage farming makes the dairy industry profitable all over the broad acres of these United States, and also lays the best and surest foundation of American farming. It will manufacture the needed supply of stable manure to keep good and even increase the fertility of all our crop land. No other system of farming begins to equal the modern dairy.—H. TALCOTT, Jefferson, O.

By examining the stomachs of no less than 2,700 specimens, Dr. A. K. Fisher has shown that of 73 species and subspecies of hawks and owls of the United States, all except six are really among the farmer's best friends, their food consisting chiefly of mice and other small mammals which are a constant source of annoyance and loss to the farmer.





## CARE OF TROTTER HORSES.

Something of an Art that Far too Few Understand.

EDITOR AMERICAN FARMER: There are but few people who know how to properly take care of the trotting horse. It is a great art. It requires long practice, close observation, and the best judgment. In this article we shall have something to say about giving him feed, exercise, training, etc., and speak of grooming as generally understood—that is, currying, brushing, rubbing and keeping his coat and skin in order. Not only his looks, but his health, strength, and speed, depend in a great measure upon the grooming he receives. The object of the groom should be to remove all dirt, dandruff and other impurities, from the hair and skin; also, to open the pores of the skin, and remove all obstructions. This should be done on every part of the body and limbs; no part should be slighted. Now, as to how this should be done. A good stiff brush is the best thing to use for the purpose. The curry comb should only be used to remove mud, and particularly upon a nervous horse with a thin skin. Some groomers like to apply the curry comb on the tender skin of the horse, to put him in all the agony possible. They like to see him kick and bite. They will rub him in the flank and under the belly with additional strength, to see what capers he will cut. We have sometimes thought we would like to give these fellows a rubbing down or two, to teach them how good it feels. It spoils the temper of the horse; makes him a biter or a kicker; it does him no good, but great injury. The groom will yell, or kick or beat the poor horse, after putting him in such agony. The tone of the voice in the stable should always be soft and kind. The horse should learn that man is his friend, not a tyrant and enemy. The grooming should be done in the gentlest possible manner, particularly on nervous horses. With the brush in one hand and the curry comb in the other, to remove the dirt from the brush, go over gently, but thoroughly, every part of the horse. Get the dirt all out of the hair and off the skin. After the brushing is done, take cloths and brush the horse thoroughly, getting up a friction which will set the pores to work. It will make the hair glossy. Old salt socks are the best rubbers that can be used. A supply of these should always be kept on hand, clean and dry. The feet should then be washed out clean and dried.

One thorough cleansing a day is enough, if done after exercise; but it is usual to give him a partial cleansing in the morning before work, and then a thorough one after his exercise, and again a rubbing after the evening walk. This is all well enough, but some groomers keep at work all the time at their horses, allowing them no time to rest. This is wrong. The horse should not be interfered with after the rubbing he receives after his exercise in the morning till he gets his evening walk. He will take his feed at 9 o'clock in the morning and rest till noon, when he will again take his feed, and rest till 3 or 4 o'clock, when it will do him good to have a walk of half an hour or so, and then a careful rubbing will be beneficial.

When a horse comes in from his exercise sweating, a blanket should be thrown over him to keep the sweat from cooling off, and a couple of good men should rub him dry as soon as possible. The hood and blanket can be applied once or twice a week on most horses beneficially to draw out a greater amount of perspiration, opening the pores of the skin, reducing the surplus matter, and cleansing the pores. But this should not be carried too far, or it will weaken and injure him. No horse can be put in proper condition for trotting without the most careful attention to grooming. It is just as important as it is to give him the proper amount of feed and work.

A great interest is now awakened in the trotting horse. There are strains of trotting blood just as reliable as in breeding. Trotting horses can be bred as successfully, and far more profitably, than racehorses. Every one wants a fine moving horse, be he merchant, farmer or divine. It is no stigma to a man in any profession that he loves a good horse, a horse that can carry him along rapidly when he wants to go rapidly, and if farmers would pay more attention to breeding good trotters they would find their profits much increased.

The condition of the horse depends much upon the management of the stable. Clean, well-ventilated apartments are indispensable to the health of all animals. The air once breathed is not fit to inhale the second time. It should be let off through conductors while rarefied in the act of respiration before it becomes impregnated with the foul air that escapes from the excrement and condenses with their elements to settle down and create disease. The first duty is to cleanse and purify the stable from those obnoxious gases that corrupt the blood and produce diseases that destroy the usefulness and endanger the life of valuable horses.

It is another condition of health that we provide fresh, clean, wholesome food. It is a fatal delusion in stable economy to use inferior oats or hay. They are

dear at any price. It is an expensive mode of introducing glanders and other contagious diseases. The horse designed to travel long distances upon the road should be prepared by exercise not less than 10 miles in the morning and about the same in the evening for several days previous to the journey. This exercise will correspond to some extent with the service required. Every animal requires hardening for all kinds of work. The draft horse must be seasoned to prevent galling and chafing under the collar or any part of the body.—A FARMER.

## MANGE IN HORSES.

What Produces It, and How It Should be Treated.

EDITOR AMERICAN FARMER: Mange in horses is a pimply or vesicled eruption. After a while vesicles break, or the cuticle and the hair fall off, and there is, as in obstinate surfeit, a bare spot covered with scurf, some fluid oozing from the skin beneath and this changing to a scab, which likewise soon peels off and leaves a wider spot. This process is attended by considerable itching and tenderness and thickening of the skin, which soon becomes more or less folded or puckered. The mange generally appears on the neck at the root of the mane, and its existence may be suspected even before the blotches appear, and when there is only considerable itches of the part, by the ease with which the short hair at the root of the mane is plucked out. From the neck it spreads upward to the head or downward to the withers and back, and occasionally extends over the whole carcass of the horse. If the same brush and currycomb is used on all the horses, the propagation of mange is assured, and horses feeding in the same pasture with a mange one rarely escape, from the propensity they have to nibble one another. Mange in cattle has been propagated to the horse, and from horse to cattle. There are also some well-authenticated instances of the same disease being communicated from the dog to the horse, but not from the horse to the dog. Mange has been said to originate in want of cleanliness in the management of the stable. The comfort and the health of the horse demand the strictest cleanliness—the eyes, the lungs, and the skin; but in defiance of common prejudice there is no authentic instance of mange being the result of opposite conditions.

Poverty and starvation are fruitful sources of mange, but it does not appear that filth has much to do with it, although poverty and filth generally go hand in hand. The propriety of bleeding in case of mange depends on the condition of the patient. If it is the result of poverty, and the animal is much debilitated, bleeding will increase the evil, and will probably deprive the constitution of the power of rallying. Physic, however, is indispensable in every case. A mercurial ball will be preferable to a common aloe one, as more certain and effectual in its operation, the mercury probably having some influence in mitigating the disease.

In this, however, mange in the horse resembles itch in the human being. Medicine alone will never effect a cure; there must be some local application. There is this additional similarity: that which is most effectual in curing the itch in a human being must form the basis of every local application for the cure of mange in the horse. Sulphur is indispensable in every ointment for mange. It is the sheet anchor of the veterinary surgeon.

In the early and not very acute state of mange equal portions of sulphur, turpentine, and train oil, gently but well rubbed on the part, will be applied with advantage. Farriers are fond of the black sulphur. That which consists of earthy matter, with the mere dregs of various substances, cannot be so effectual as the pure, sublimed sulphur. A tolerably stout brush, or even a currycomb lightly applied, should be used in order to remove the dandruff or scurf whenever there is any appearance of mange. After that the horse should be washed with strong soap and water as far as the disease has extended; and when he has been thoroughly dried the ointment should be well rubbed in with the naked hand or with a piece of flannel. More good will be done by a little of the ointment being well rubbed in than by a great deal being smeared over the part. The rubbing should be daily repeated. During the application of the ointment, and as soon as the physic has set, an alternative ball of powder, similar to those recommended for the other affections of the skin, should be daily given.

If, after some days have passed, no progress should appear to have been made, half a pound of sulphur should be well mixed with a pint of oil of tar, or if that is not to be obtained, a pint of Barbadore tar, and the affected parts rubbed as before. On every fifth or sixth day the ointment should be washed off with warm soap and water. The progress towards cure will thus be ascertained, and the skin will be cleansed, and its pores opened, for the more effectual application of the ointment. The horse should be well supplied with nourishment, but not stimulating food. As much green feed as he will eat should be given to him, or, what is far better, he should

be turned out, if the weather is not too cold. It may be useful to add that, after the horse has once been well dressed with either of these liniments, the danger of contagion ceases. It is necessary, however, to be assured that every mangy place has been apparently cured, and to continue the alternatives for 10 days or a fortnight. The cure being completed, the clothing of the horse should be well soaked in water to which a fortieth part of the saturated solution of the chloride of lime has been added; after which it should be washed with soap and water, and again washed and soaked in a solution of the chloride of lime. Every part of the harness should undergo similar purification. The curry comb may be scoured, but the brush should be burned. The rack and manger, and partitions, and every part of the stable which the horse could possibly have touched, should be well washed with a hair broom, a pint of the chloride of lime being added to three gallons of water. All the wood work should then be scoured with soap and water, after which a second washing with the chloride of lime will render all secure.—A FARMER, Columbiana County, O.

## The Kansas Way.

EDITOR AMERICAN FARMER: In answer to Mr. William T. Crozier on the hog raising, I would say, we cannot comply or succumb to his way of raising the hog. We are trying to get clover pastures for our hogs to run on after taking them off our wheat in Spring. We have tried rooting hogs, and have grown tired of it. I have turned off as high as 90 head in one year, and have observed that the hog whose rooster I did not cut was the scawag of the lot. I let them run on the clover of mornings and evenings, giving them some grain, which is all they want if they have shade to lie in. I turn off my hogs at eight or nine months old; average weight, 250 pounds. I sold a hog this Winter that weighed 670 pounds; he was well protected from rooting.—H. A. V., Riverdale, Kan.

## Cotton Seed for Pigs and Horses.

EDITOR AMERICAN FARMER: Can cotton seed meal be fed to pigs and horses with safety?—ALVIN M. SHAW, Williamsburg, Mass.

The experience at several Southern Experiment Stations is decidedly adverse to feeding cottonseed or cottonseed meal to pigs. The Texas Station found that death ensued in from six to eight weeks after either was introduced into the ration. The mortality of pigs fed on cottonseed meal was 87 per cent; on roasted cottonseed 75 per cent, and on boiled cottonseed 25 per cent. Other stations had much the same experience. We have no knowledge of the results of feeding this to horses. Perhaps some of our Southern readers can give some information on this head.—EDITOR AMERICAN FARMER.

## Dehorning Cattle.

EDITOR AMERICAN FARMER: Please publish the chemicals for dehorning cattle, and the process.—J. W. PHILLIPS, Luckey, O.

The chemicals are simply caustic potash, such as can be procured in any drug store. It comes in white sticks about the size of a lead pencil. The process is begun just as soon as the horns begin to bud. The little bud is slightly moistened, and the potash rubbed on it. This destroys the germ of the horn. It is precisely the same process as that by which corns and warts are removed, and the philosophy of it the same, as horns, like corns and warts, are developments of the skin. The caustic potash process has been patented.—EDITOR AMERICAN FARMER.

## Tuberculosis in New York.

An inspection of a herd of 60 cows was made February 28 at a dairy a short distance from Avon, N. Y., by a staff of surgeons of the State Board of Health, and was witnessed by Dr. Hinekey, Chief United States Veterinary Inspector for Western New York, and Dr. Thornburg, United States Bacteriologist for the same district. Nine cattle were condemned as suffering from tuberculosis, four of which occupied adjoining stanchions, thus bearing out the theory that tuberculosis is infectious. A thorough inspection will be made of other herds in this section.

## To Keep Weevils from Grain.

Bisulphide of carbon is one of the worst smelling chemicals there are. A new use for it has been discovered which ought to make it very popular and of large consumption. The peculiar and highly inflammable gas evolved from this powerful and volatile fluid has a downward as well as an upward tendency, a circumstance which renders its use for the destruction of weevils, insects of all kinds, vermin, etc., of the highest practical utility.

An experiment was recently made in the following manner: A small bottle of the fluid, about one pound, was placed on the floor of an empty 1,000-bushel bin, with a small piece of muslin cloth placed loosely on top of the bottle instead of a cork; over all was placed a broken box so as to protect the bottle from being upset or broken, and then the bin was filled to its utmost capacity with corn. On the top of the pile another bottle was placed having the same arrangement as the one buried beneath the grain.

The result was highly satisfactory. The live weevils admitted from the field while housing the grain were utterly destroyed, and none further appeared. A thousand bushels of corn were in this case protected from weevils and vermin of all kinds, rats and mice fleeing precipitately from the deadly odor. It is estimated that the loss to farmers through the destructive methods of the weevils alone last year amounted to \$1,000,000.

## SHEEP AND WOOL.

The Merino as the World's Mutton Sheep.

The mutton Merino sheep is not a "fad." It stands as a fact, notwithstanding all the criticisms, oppositions, and comparisons. The Merinos of Australasia furnish the great bulk of frozen mutton eaten in England. The Merinos of South America are the basis of competition in frozen mutton by European Nations so dreaded by Australians just now. The Montana Merino sheep are good enough for export to the London market. The fat muttons of Texas are the Summer dependence of the St. Louis and other Northern markets. The range Merino ewes are always in demand to give vigor and development to the crosses with English breeds. The Merino ewe bred to a Down, a Longwool, or almost any ram, furnishes "the Spring lamb" that catches the early market and the fancy prices. When wool was all that was wanted, the Merino filled the bill. When mutton was sought for the Merino met the question heartily and readily, and gave a more valuable fleece to boot. It was said by some that the Merino was too small for mutton, but the Merino size is found to be exactly what is wanted by the consumers, and so compels mutton raisers to modify the sizes of carcasses to a Merino standard or be beaten in the markets.

The Merino sheep show at Chicago was an eye opener to all men, whether they wanted to see or not. The various types of Merinos—types the results of conditions that register associations could not control nor confine to the standards laid down in books, though proscribed by resolutions and registration committees. It was found that Vermont had a type, New York had a type, Pennsylvania, Ohio, Michigan, Illinois, Missouri, and Kansas had each type that the books were unable to exactly define. There is only one parallel in sheep raising with which to compare Merino sheep as we find them now, and that is with the Down sheep of England. The Southdown and the whole list to Oxfordshire, and for the same reasons, what is coming in the type of the Merino sheep in America. We used to hear of Hammond Merinos and Rich Merinos, and as the developments went on, we heard of McDowell, Boyden, Peck, King, Butwell, and Shattuck Merino sheep. These are all of the same blood, but changed by nature and selection, suited to their several localities and the notions of their breeders. There were Merinos weighing from 285, 203, 175, to 80 and 100 pounds per head at their best state. Nor were these Merinos dependent upon importations of fresh blood to keep up their characteristics. They have come to stay with American farmers.

## The Future of Sheep Raising.

Let us anticipate the future of sheep husbandry of this country; will we speak of wool growing or will it be mutton growing that will be inquired after? Shall we hear of wool growers at all? Probably, they will be spoken of as the pioneers of the sheep industry in the sacred sense that the signers of the Declaration of Independence, as the Revolutionary soldiers, as the patriots who bequeathed to their posterity a Government that serves as a home for the oppressed of all lands. Are they to become the relics of a glorious and beautiful past? The Wilson law (God forbid) will be a bottomless pit that many wool growers will refuse to cross whether they could or not. But will sheep raising be taken up on new lines by the present flock owners? Will we hear of Ohio mutton raisers, Texas mutton raisers and Montana mutton growers? What about wool prices? The picture becomes too sickening, too mortifying to be anticipated any further. The rivals of the American wool growers, the manufacturers of England, Germany, France, and the Democratic party are standing behind the Wilson Bill, and an Egyptian blackness covers the future of sheep husbandry in this country.

## How to Build up the Farm.

Is the farm running down by reason of the soil being impoverished? Is the future gloomy and discouraging to the grown-up boys? Is the fertilizer bill getting larger each year, and the crops less and less? Ah! there's the rub; but it is true. The remedy is right at hand; try sheep; feed bran and oilmeal; sow clover; study the business; encourage the boys; enlist the help and interest of the girls in the flock; dispense with fertilizers that the sheep will not live on; quit hired help; watch the comers a few years, and prosperity will come to the farm and family as sure as two and two are four. Sheep have done all this for thousands of farms, will do it more and more as they are better appreciated, and must do it for every farm in the United States. The farmer that ignores sheep as the factor of good farming will grow poorer until he dies or sells out to a new and more intelligent man, who will use flocks to restore fertility. Cattle are good for a good farm, but sheep beat all domestic animals in bringing up a poor, neglected, abused, poverty-stricken farm. If you don't believe it, just try it a little on a few acres. The cheapest fertilizers are bran, oilmeal and clover; feed them to the sheep before applying them to the land. If the sheep run over the fields they leave much of the fertility in the right place.

Thousands of farmers are growing poorer and impoverishing their land by trying to grow wheat and corn for the market in competition with the West and Northwest. To put it nearer home still, they are unable to compete with neighbors who have similar land, but by making stock raising a part of the farm system, manage to keep up the fertility of the soil.

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## Cheaper Stock Feed.

THE AMERICAN FARMER feels that it cannot urge too often or too strongly the attention of sheep raisers to the production and use of cheaper feeds. The cost of production governs the whole question of competition and of profits in every business. In sheep raising the supply of a more uniform, reliable feed is important. In addition to this, the supply must be, and can be, of a less cash value than corn, oats, and hay, which have constituted the general feeds outside of pasture for sheep on farms. Of pastures, as pastures are, it may be well to say, good and sufficient pastures are rarely seen. It is rarely seen that a pasture produces the full amount of grass that it should. There are bare spots, thin, poor spots, in all pastures, that are so by reason of inattention to reseeding, neglect in care, ignorance as to what to do to improve the carrying capacity of the land. It is found that no one variety of grass will produce as much feed as two, and no two kinds of grass will fully occupy the ground. The use of two or more varieties is increased by reason of one furnishing feed at one season and another at another part of the season. Blue grass is the dependence in this region, but when the drouths come, unless the area is far in excess of the demand, or the amount of stock kept in the pasture is small, the supply is cut short. This would not be so serious if a variety of grasses were used. Until this uncertain supply of pasture is overcome there will be a check to the growth, a loss in condition, and a loss in the profits of keeping sheep.

It has long been the opinion of the writer that too much dependence has been put in the staple crops, corn, oats, and timothy hay. The conclusion among farmers is that if these feed stuffs will not enable them to raise wool and make money, they must abandon the business; that the foreign wool grower must be shut out by legislation, so that the tariff shall compensate them for high priced feeds, uncertain seasons, and a hundred other things. It is believed, and seems reasonable enough, that the foreign wool grower has cheaper lands, a more genial climate, a more luscious, perpetual green feed supply, advantages not possessed by the American sheep grower, that the farmers of this country cannot compete with. It is the opinion of THE AMERICAN FARMER that the rich soils of this country, the industry, energy, and intelligence of farmers can, and must, overcome this disadvantage, if such really exists, by making the most of the opportunities and facilities within their reach. To illustrate: A Delaware farmer uses corn and scarlet clover for ensilage crops, growing one crop of each on the same land in one year. He got 17 tons of green corn, exclusive of the ears (which were sent to the canning factory), and 15 tons of green clover, making 32 tons from each acre of land. This to many will seem enormous, but it is readily done, and can be done year after year. It is estimated that farmers get only 60 per cent. of a corn crop where the grain only is considered as the profit. Here is a waste of 40 per cent. on every acre of land planted to corn—a fearful waste truly; an unnecessary one, too. It is found that 35 to 40 bushels of corn are the rule on land that used to yield 75 to 80 bushels. The remedy for this is an economic system of

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8. The Place de la Bastille, Paris.
9. Table on which Napoleon I. Signed his Abdication.
10. The Dairy of Marie Antoinette, Versailles.
11. View of Amsterdam, Holland.
12. The National Park, Norway.
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farming that shall restore the fertility of the soil and maintain it. Instead of keeping timothy meadows that annually yield one to one and a half tons per acre of hay, they can be put to clover and yield twice as much hay and of a quality much better for the flocks. Nearly every farmer knows that he manages his feeding so badly that he practically wastes all his Winter supplies without increasing the value of his animals. It might be said that one-half of the farmers aim to maintain the stock during Winter, and expect the pastures, uncertain, as we have shown, to make all the growth of his flocks and herds.

A tremendous gain can be made in feeding combination feeds, or as the Experiment stations call it "balanced rations," instead of "going it blind," hit or miss. Right here are new lessons that have to be learned, and will be learned if the American sheep raiser has to contend with the cheap conditions of Australia or the intelligent methods of Canada which now confront them. If all the facilities within reach and possible are used, the sheep raisers of this country need not fear foreign competition.

## Spraying Fruit Trees.

When apples bring \$2 per bushel and wheat only about 50 cents, when the expense of taking care of an acre of apple orchard is no greater than that of an acre of wheat, while an apple orchard will yield ten bushels of apples to one bushel of wheat, it is about time fruit growers are opening their eyes and taking care of crops which pay the largest profit. What is true of apples may also be said of other varieties of fruits. By properly spraying your fruit trees, vines and vegetable crops, you are sure of a crop, no matter what the weather conditions may be. Send 6 cents to William Stahl, Quincy, Ill., and get his catalogue of spraying outfits and complete treatise on spraying. It will pay you to do so. Mr. Stahl has been interested himself in growing fruit largely for many years, and fully understands the wants of fruit growers in this direction.

## The Lincoln Breeders.

EDITOR AMERICAN FARMER: At the last annual meeting of the Michigan Lincoln Sheep Breeders Association was found to be in a very flourishing condition; 800 sheep registered the past year; every share of stock taken and we declared a 28 per cent. dividend, which we consider good in these good old Democratic times.

The members were enthusiastic over the sales made; all sold out as far as reported. The name of the Association was changed to the National. The officers for 1894 were elected as follows: President, J. J. England, Caro; Vice-President, J. T. Gibson, Denfield, Ontario; Secretary and Treasurer, H. A. Daniells, Elva; Directors, Bert Smith, Charlotte, Mich.; J. H. Patrick, Iderton, Ontario; E. P. Oliver, Flint, Mich.; A. H. Warren, Ovid, Mich.; G. E. Post, Ovid, Mich.; Pedigree Committee, Wm. Shier, Marlette; J. T. Gibson, Denfield, Ontario; F. H. Neil, Lucan, Ontario.

Our sales have extended to Lewis County, Wash., and have priced them in Oregon.—H. A. DANIELLS, Elva, Mich.

## Virginia as a Sheep Country.

EDITOR AMERICAN FARMER: I wish to resort to your columns for information relative to Virginia lands, as to their adaptability for successful sheep raising on conditions that I will name.

Having 800 acres in central Virginia of old plantation land, largely upland, gray soil, with red clay subsoil, which has not been used for many years; has some second-growth pine, with considerable brush and shrubbery of various kinds intermingled, I would like to improve the land by growing sheep on it. Will sheep, say, five or six to the acre, make their own living on this land nine months of the year by browsing, etc., without any more feed? To what degree will they kill out the brush, weeds, etc.? Do you think they will kill out all the small growth, say, up to one-half inch in diameter, in three or four years?—NON-RESIDENT.







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Political economy has been aptly described as "the science of enlightened selfishness."

It is not philanthropy, it is not religion, it is not benevolence, it is not necessarily politics.

It begins by encouraging the individual to do the best possible for himself. If every man will do this in an intelligent, well-directed way, the communities in which he and others like him live will prosper, and, therefore, the whole country. Political economy, therefore, begins with the individual. That country alone is prosperous, and most prosperous, in which the greatest number of individuals are prosperous.

Scientifically and actually, it is vastly better that in every community of 5,000 souls there should be 1,000 men who each make \$1,000 a year, than that each of these make only \$250, while one man makes \$100,000. This is true political economy.

The United States contain 70,000,000 people. These are naturally dependent on each other. Nearly the whole of their livelihood is gained by supplying each other with the necessities of life. The main object of all Government is, after affording security to life and property, to facilitate and encourage the exchange of different kinds of products among the various kinds of producers constituting its population. It is its duty to see that, to the greatest extent possible, its own people supply each other with what is needed. This for three reasons:

1. That the money be retained in the country for the use of all the people in the country.
2. That the greatest amount of employment be given to all the inhabitants, and therefore each individual get the highest possible share of prosperity.
3. That its people may to the greatest extent be rendered independent of other countries.

As we have said before, this is simply the extension to National matters of the sound rules of thrift and business governing the conduct of families, farms, and business houses.

Each family, farm, and business house strives, and should strive, to keep as much as possible of the money it gains for itself by producing as much as is practicable of what it consumes; what it buys outside it should make an effort to get of its neighbors who buy of it, so as to make trade reciprocal, and to enable all to get as much as possible of each other's products, waste the least by long transportation, and keep the money, the medium of trade, as near home as possible. So we go from the little local community to the larger commercial divisions, and from them to the Nation as a whole.

A little inland community, let us say, in Georgia or Alabama, ought to strive to produce all that it can, reasonably and profitably, of what it needs. That which it cannot produce it should get from its nearest neighbors who do produce it, and so on until it reaches the commercial centers of its section—Savannah, Atlanta, Mobile, etc., and from them to the commercial centers of the whole Nation. So that if that little community will do the best it can for itself and for its own people, it will contribute to the prosperity of the whole country. The prosperity of the whole is made up of that of the different parts.

This brings us to the common sense of protection to farming. The prosperity of the farmers is the basis of that of the whole country. It cannot be otherwise. The manufacturers and merchants cannot sell more than the farmers are able to buy. Foreign trade for manufactures is still a good way off. It will have to be valiantly fought for against the fierce competition of English, Belgium, French and German manufactures. Ours must, therefore, continue to rely for their support upon our own farmers.

What reliance can they have if the farmers are reduced to poverty by foreign competition? What will become of manufacturers and merchants when their customers are deprived of the means wherewith to buy?

Are not these being reduced to poverty,

and deprived of the means wherewith to buy?

No man can successfully deny that the present tendency is to the direct impoverishment of the farmers of the United States.

They are being encouraged to devote themselves to raising articles upon which there is the smallest margin of profit, and which when exported are sold at an actual loss, while at least one-fifth of all the money in the country is sent abroad every year to buy agricultural products that should be produced on our own soil.

To the man of common sense this looks like wicked economic suicide.

We raise hundreds of millions of bushels of wheat, corn, and oats to sell in England at what is really much less than the cost of production, when we take into account the value of the fertilizers they have abstracted from the soil. On the other hand, we buy about every year \$300,000,000 worth of sugar, potatoes, barley, wool, fruits, butter, cheese, eggs, etc., which should come from our own acres.

Can there be any defense of such economic folly?

The thrifty farmer does not make such a fool of himself as to do this in every day life. He does not toil and sweat through the summer to raise a crop of wheat to sell at 45 cents a bushel, and then take the scanty price of his grain over to his neighbor, and pay him big prices for his eggs, butter, potatoes, and other supplies for his family. As we do not do this as individuals, why should we make it a National policy?

Our true and our only policy should be to raise no more wheat and corn than our people need, sell none abroad, and raise at home the farm products that foreigners sell us at a profit.

This is the way to solid prosperity for farmers, and when the farmers are prosperous everyone else will be.

## THE STATUS OF THE WILSON BILL.

The Wilson Bill is still in the hands of the Senate Committee on Finance, and the date of its report to the Senate is still as indefinite as ever. The latest information from those who claim to speak with authority is that it will be reported back in time to be fully discussed and passed by June 30.

In the meanwhile the committee has made many changes, and altered the revenue character of the bill, so that now it is estimated that it will produce a surplus of revenue, instead of the deficiency of \$72,000,000 calculated when it passed the House. The Senators have been much more regardful of the interests of their constituents than the Representatives were. Senator Murphy, of New York, was even able to get an increase of duty on collars and cuffs for the benefit of the great industries of his home city, Troy.

About the only great article that remains upon the free list is wool, and the hopes of sheep men rise that they are not to be utterly sacrificed, after all.

March 12 Senator Peffer introduced a substitute for the Finance Committee's bill, which provides a duty of eight cents a pound on wool. He has said that he is willing to accept six cents, if he cannot get more, and the opinion grows that one of these rates will be adopted, for they can command the support of the 38 Republican Senators, and of the Populists, Peffer, Allen and Kyle. This will make 41. Probably, also, the two other Populists, Irby and Martin, will vote the same way. Senator Roach, Democrat, from North Dakota, it is believed, will vote for it, as he, like Irby and Martin, was elected by farmer votes. This raises the vote to 44, or a majority, since the Senate has now only 85 members. It is felt, also, that the vote of Senator Brice, of Ohio, can be relied on, if necessary.

This makes the most cheering outlook for the wool-growers that we have been able to report since the Fall of 1892.

The adoption of a duty of eight, or even less than six cents a pound on wool would be a considerable mitigation of the evils threatened by the Wilson Bill. It is far less protection than the farmers should have, but it is much better than nothing, and will have to do until something better can be secured.

The Secretary of the Treasury reports that the money in circulation March 1, 1894, was \$1,690,675,152, of which \$496,830,383 was gold. Before the 1st of March, 1895, over \$300,000,000 of that money, or nearly one-fifth, will have gone abroad to purchase farm products which should have been raised at home. Is not this scandalous?

## IN THE MATTER OF POTATOES.

In our last issue we discussed the importance of a proper protective duty on eggs. In this we will take up another even more important item.

Few farmers appreciate the immensity of the importations of foreign potatoes. In the years preceding 1890, when the duty was 15 cents a bushel, we imported annually 8,788,308 bushels of potatoes, valued at \$4,656,308.

In 1890 the duty was raised to 25 cents a bushel.

This reduced the importations in 1891 to 5,401,912 bushels, valued at \$2,707,927, and in 1892 to only 186,871 bushels, valued at \$186,006.

But the prices of agricultural produce in Europe have been so low during the past season, that the farmers there felt that they could afford to sell potatoes in this country in spite of the high duty, and the result is that between Oct. 1 and Feb. 10 there have been received at the port of New York alone, 215,965 sacks and barrels of potatoes, or three-eighths of all the supply of the city. In the week Feb. 10-17 three steamers alone brought to New York 37,000 sacks of English and Scotch potatoes. A little analysis will show how greedy the English and Scotch farmers are to sell in this market. A sack of English magnums weighing 168 pounds sells in New York at \$1.70, and has been sold as low as \$1.50. The following has to be deducted from the selling price:

Duty, at 25 cents a bushel.....	20
Freight, 20 cents per bag.....	20
Commission, 15 cents per bag.....	15
Cost to shipping port abroad.....	10
Transfer to steamer, brokerage, etc.....	10
Total.....	\$1.25
Leaving for English farmers only.....	25
Total.....	\$1.50

This does not take into account the profits of the go-betweens who have bought the potatoes of the farmers.

"English and Scotch magnums" are advertised for sale by every grocer in Washington, and they probably find their way much farther West and South.

The report of the Statistician of the Agricultural Department gives the average production of potatoes in the United States for the 10 years preceding 1890 as 87.7 bushels per acre, and 76.3 bushels for the nine years from 1880 to 1888. In 1893 the yield was 72.2 bushels per acre.

If we assume an average production of 80 bushels to the acre, we will see that the importation of 8,788,308 bushels a year prior to 1890 took away from our own farmers the market for the product of more than 100,000 acres of the best farming land in the country, and it took away work, wages, and profits from at least a quarter of a million farmers, who would otherwise have been engaged in raising these staples for our home markets. Still worse, it fixed the prices at which the whole of the 200,000,000 bushels raised in the country were sold.

The Wilson Bill proposes to reduce the duty to 10 cents a bushel, which can hardly help doubling or trebling the importations, and keeping the price preposterously at the lowest figure.

The extent to which Florida oranges have captured the Boston market is not easily realized, but this year they have filled the place formerly occupied by the Sicily fruit, and are everywhere in demand. The foreign fruit is only one-third as large in importation as it was a year ago, and the production of oranges in Florida is so great already, and is so rapidly increasing, that the Florida fruit bids fair to hold the market in the near future. The variety of this fruit in quality is matched by its variety in prices, and its excellence is such that people who use the Florida oranges once use them again. The production this year will be 4,500,000 boxes, and it is estimated that shortly it will amount to 10,000,000 a year.—Boston Herald.

And yet the Herald is constantly burling that protection does not do the farmers any good whatever. As a result of the duty on oranges and lemons, many thousand men who would otherwise be increasing the surplus of wheat to be sent abroad and sold at a loss, are engaged in supplying the country with fruit that we had previously been buying in Spain and Italy. Let us have more of that kind of protection, for in the last 10 years we have sent out of the country more than a quarter of a billion of shining American dollars for fruits and nuts that should have been grown by our own farmers. Take the value of the imports of fruits and nuts for the last three years, and ponder over them:

1891.....	\$8,015,517
1892.....	\$2,006,362
1893.....	\$3,699,659
Total for three years.....	\$80,624,428

Russia is also becoming a dangerous competitor in oats. In 17 weeks of this year she has exported 42,000,000 bushels of oats against 8,000,000 for the same time last year. Since Aug. 1 she has sent out 51,000,000 bushels, against 15,000,000 bushels for the same time last year before.

## Depth of Snow on Ground at 8 p. m. Monday, March 12, 1894.



WASHINGTON, D. C., March 13, 1894.

Since the issue of the snow chart for the preceding week, from one to five inches have disappeared over the region from Minnesota westward to the north Pacific States; from two to six inches have disappeared over the Upper Michigan Peninsula, and from one to ten inches have disappeared in northern New England.

At 8 p. m. March 12, 1894, only limited areas in extreme northern districts were covered with snow, and with the exception of the eastern portion of the Upper Michigan Peninsula, where there were from three to nine inches, the depths reported nowhere exceeded one inch.

The snow chart for the corresponding week of last year shows that at that time the area covered by snow extended from Idaho and northern Utah eastward over the more northerly districts to the Atlantic Coast, the southern limit touching eastern Nebraska, southern Wisconsin, central Michigan, and the northern portions of Pennsylvania and New Jersey, there being nearly two feet in northern Minnesota, and from one to one and a half feet over the eastern portion of the Upper Michigan Peninsula and northern New England.

MARK W. HARRINGTON, Chief of Bureau.

## FIGHT FOR YOUR RIGHTS.

To the onlooker in Washington it is astounding to see how little the farmers of the country have done to defend themselves against the vicious onslaught of the Wilson Bill, which was directly leveled against them.

Infinitely smaller interests, which were threatened much less, rose up in arms at once, and raised a storm about the ears of Senators and Representatives.

Take such a relatively unimportant industry as that of the manufacture of collars and cuffs in Troy, N. Y. It does not begin to compare in importance with the barley, wool, fruit, potato, egg, butter, cheese, or other products that we could mention. Yet it asserted itself so determinedly that at least one Democratic Senator put himself squarely in opposition to the Wilson Bill, and he was speedily given what he wanted.

If the farmers of the country had shown anything like that determination, the agricultural schedule of the Wilson Bill would either have been stricken out or made stronger than the McKinley Bill.

The farmers must fight for their interests the same that others do. They must do this without regard to politics, as the others do. It is THE AMERICAN FARMER'S mission to aid and lead in this fight. It has no political alliances or entanglements. It sees in every public man only an enemy or friend of the farmer, and treats him from that standpoint.

It wants the support of every farmer who is opposed to having his interests sacrificed to make political capital with other classes. All such should subscribe for it themselves, and see that their neighbors do the same.

If they will do this it will be the greatest and most powerful instrument in the country in securing justice for them.

Let us hear from every farmer who objects to being sacrificed for the sake of political bombast.

The cheap clothing liar can be brought to instant confusion by asking how many pounds of wool there are in a suit of clothes, and asking him to figure the difference in cost from its being made of wool at living and at free trade prices. Don't let him take refuge in any cocked-up statistics. Demand that he lay his own coat on the grocery scales, and give you figures from it about which there can be no dispute. Remember all the time that at least half the weight of his coat is not wool.

On one thing THE AMERICAN FARMER is radical. It does not believe that a single agricultural product should be bought abroad that can be raised at home. It is all nonsense to say that they can raise them better and cheaper somewhere else. Give our farmers the protection of a steady home market, freed from the devilry of tricky politicians, and they will supply our people with cheaper and better goods than can be gotten anywhere else in the world.

We probably have to buy tea from China; but there is no sense in buying eggs from that country by the hundred thousand dozen.

## U. S. DEPARTMENT OF AGRICULTURE.

## Extension of Its Work and Usefulness.

Secretary Morton has created a new Division in the Weather Bureau to be known as the Division of Agricultural Soils. Prof. Milton Whitney has been appointed Chief of the new division. Prof. Whitney is well-known in agricultural, educational, and scientific circles, and has been conducting investigations regarding the relations of climate and meteorological conditions to soils for some years, during which he has been connected with the Maryland State Experiment Station and the Johns Hopkins University. He was also for some time employed in the Weather Bureau and in 1893 prepared a special report on "Some physical properties of soils in their relation to moisture and crop distribution," which was published as Weather Bureau Bulletin No. 4. The purpose of the new Division is to pursue investigations of an analogous character—carrying the climatic observations of the Weather Bureau into the soil, where the moisture effects its work and makes its influence felt upon the plant life. The Secretary's order briefly defines the work as follows:

"It shall be the duty of this Division to study the climatic conditions of heat and moisture under the surface of the ground, and the relation of these conditions to crop distribution."

It is hoped that the work of the new division will result in acquiring a great deal of information of value to farmers on the character of soils in relation to the distribution of moisture to plants. The solution of the problems involved will serve to determine the adaptability of certain kinds of soil to certain crops, by which the value of land may be greatly increased. Instances of this kind are strikingly furnished by the utilization for truck farming in Maryland of lands unsuitable for other crops, and which as a result have increased 10 and 20 fold in value, and also by the adaptation in other States of certain soils regarded heretofore as worthless for tillage, but which, having been found to be of a nature suited to the production of certain varieties of tobacco, are now among the most valuable in their respective States. The appointment of an additional special agent in the Division of Botany, who shall be an expert on the subject of grasses, has been authorized by the Secretary of Agriculture. The comparatively large salary of \$2,500 per annum has been decided upon, in the hope that the best man available may be secured for this position.

## DEPARTMENT OF AGRICULTURE.

## Report of the Statistician.

## DISTRIBUTION AND CONSUMPTION OF WHEAT.

The statistical returns of the Department of Agriculture for March consist principally of estimates of the distribution of wheat and corn, the amounts remaining in farmers' hands, the proportion of merchantable corn, and the average prices of both the merchantable and unmerchantable. The report is based upon returns from a corps of correspondents in each County of the several States and Territories, and also from an independent corps, equal in number, reporting to the Statistician through the State agents of the Department. All grain in the hands of farmers, including the surplus of previous years, is embraced in the estimates given.

The returns of the correspondents of the Department throughout the great wheat surplus States indicate a new factor in the consumption of wheat, viz., the feeding of the same to hogs and other stock, a fact due, as declared, to the unprecedentedly low price the claim being made that this mode of disposing of the cereal is profitable as compared with marketing it for human food. The returns also indicate that a considerable proportion of the wheat now in farmers' hands comes from crops prior to that of 1893, and especially from the crops of 1891-92. Such stocks have been held principally by large growers. Some damage to such stores is reported from Michigan and Washington.

The indicated stock of wheat in farmers' hands is 114,000,000 bushels, or 23.8 per cent. of the volume of the crop of 1893. This is nearly 21,000,000 bushels less than the estimate for March 1 last year, and nearly 20,000,000 less than the average of the past eight years. The amount remaining in farmers' hands in the 11 principal wheat-growing States is about 73,000,000 bushels, or 63.8 per cent. of the amount in producers' hands in the country at large.

The average weight of the crop of 1893, per measured bushel, as calculated from correspondents and millers and State agents, is 57.6 pounds, making the estimated product a little over 381,500,000 commercial bushels as against 306,000,000 measured bushels, as heretofore reported.

The proportion of merchantable corn is 85.1 per cent., at a present average value of 34.9 cents per bushel. The unmerchantable averages 32.2 cents per bushel.

## WHEAT CROP OF THE WORLD.

In North America the total production of wheat in 1893 was 447,479,000 bushels, a decrease of nearly 127,000,000 as compared with the preceding year, and of 237,000,000 as compared with 1891. The large extension of the wheat area in Argentina brought up the production of South America from 51,000,000 in 1892 to 82,000,000 in 1893, an increase of 61 per cent. Europe produced 2,000,000 bushels more in 1893 than in the preceding year. Asia's share of the world's wheat production was 346,000,000 bushels as against 290,000,000 in 1892 and 245,000,000 in 1891. Africa's crop was 35,500,000, an increase of 1,000,000 bushels over 1892. Australia's output stood at 41,000,000 bushels as against 36,000,000 in 1892 and 33,000,000 in 1891. The total world's crop of wheat for 1893 is estimated at 2,360,471,000 bushels, which is less by 32,000,000 than the crop of 1892 and about equal to the crop of 1891.

## PERSONAL.

The Green Mountain Stock Farm Company, of West Randolph, Vt., a corporation organized under the laws of Connecticut with a capital stock of \$500,000, has made an assignment in the Probate Court.

The company was considered the largest stock concern in the United States, and has won many prizes at different cattle shows in this country and in Europe. It owns thousands of acres of land in Vermont. The liabilities are placed at \$70,000, and the assets at \$75,000. Most of the stockholders are residents of Vermont. The reason given for the failure is that the company has too much land. William H. Dubois, of Rutland, Vt., was named as Trustee.

Mr. C. P. Bailey, the most extensive breeder of Angora goats in America, sold six of the finest Angoras, a pair of his World's Fair exhibit, to go to South Africa. They went direct from Chicago after the Fair closed. They were beautiful animals, and a credit to their enterprising breeder. We hope this order may prepare the way for many other sales.

March 6 Gov. Flower, of New York, gave a dinner at the Executive Mansion at Albany in honor of Hon. J. Sterling Morton, Secretary of Agriculture. Among those present were Chief Justice Andrews, of the Court of Appeals; Justice Herrick, Lieut.-Gov. Sheehan, Speaker Mallory, and Col. Williams, the Governor's Private Secretary.

Farmer David Rosenberger, Kittingham Pa., thinks that things come altogether too tumultuously in this world. Right atop the Wilson Bill, hard times, 65 cent wheat, wool at free trade prices, and no sale for anything, his wife presents him with five babies at one clip—three boys and two girls,—all of whom are alive and doing well.

The Earl of Rosebery, the new British Prime Minister, is the biggest dairyman in England. He supplies a large part of the milk used in London, but does not have his name on his wagons, as does another "Lord Lord" who is a strong competitor—Lord Baylis.

March 12, Joseph Harshbarger, a wealthy farmer of Jamestown, Ind., was at the neighboring town of Crawfordsville with his family and was apparently in good spirits. All were gathered at the Big Four Depot, and of his train came rolling in, Harshbarger shouted, "Farewell, ye worms of earth," and jumping from the platform laid his neck across the rail. He was instantly killed. His wife fell fainting, and is now crazy. Sudden insanity is supposed to be the only cause.

Prof. Emil Bauer, one of the best known horticulturists in the West, was found dead in his workshop at Ann Arbor, Mich., on the afternoon of March 8. He had been suffering a long time with heart disease. For many years he was the agent for the Huron County lands owned by the Economy Society of Pennsylvania. He leaves a widow and a number of children.

## Notes.

Miss Mildred Howells, daughter of the novelist, has a decided talent for drawing, which was first exhibited to the public several years ago in a collection of child's verses and sketches. An edition of her recent and more serious work will be given in the April Harper's, for which she has made a head-piece illustrating a poem by Mr. W. D. Howells.

In the Easter number of Harper's Bazar, issued March 17, there will be a story by Marion Harland, entitled A Distinction and a Difference, illustrated by Lotus W. Hildcock, and a clever sketch by Kate Upson Clark, entitled Easter Hats, illustrated by W. H. Howe. Sketches and articles by other writers will be full of Easter suggestions.

The Phenological Journal and Science of Health. Published by Fowler &amp; Wells, New York. Price 15 cents.

The March 1 AMERICAN FARMER is very valuable. The editorial on "Imports of Farm Products" should be republished in every paper in the country having a regard for the public welfare.—WM. LAWRENCE, Bellefontaine, O.



## THE GREATER CONGRESS.

## Farmers Discuss the Topics Which Interest Them.

EDITOR AMERICAN FARMER: I can cheerfully say I do not know of any paper published in any State which surpasses THE AMERICAN FARMER in the excellence of its information. The unanswerable arguments for the protection of the farmer's interests should be in every home in the land, for without protection the home of the American farmer, mechanic and laborer will become an almshouse, prosperity will be impeded, and the destruction of every American industry assured.

Yesterday hundreds of men marched through the streets of Salt Lake asking for work—work, not bread of charity. When it is known that in any other State in the Union, that more people own their own homes here than in any other State, the amount of poverty, distress, and suffering in other States can be appreciated. If free land passes the Senate, as it did the House, the absolute destruction and closing up of every mine in Utah, and the consequent discharge of every miner now employed, is assured.

—CHAS. CRANE, Salt Lake City, Utah.

EDITOR AMERICAN FARMER: I see no valid reason why the farmer should not be protected, if other classes of manufacturers are. I agree with Joseph Herr that the man who cultivates the Genesee farm is a manufacturer. I believe in protecting home industry. The opposite policy is now working to the detriment of agriculture. I am strongly opposed to a policy which protects other industries to the injury of that in which I am engaged. The Republican party commenced this bad work by taking the duty off hides. I am inclined to think that reciprocity properly carried out would be a great help to the farmers of this country, but I don't think it wise to raise land values, as some high tariff advocates urge. But if land values continue to decline for the next 15 years as they have for the last 15, there will not be much left. I do not consider this probable, however, even under free trade, as we have already suffered quite as much as we are likely to in the decline of land values. I am not frightened at the prospect of taking off the duties on many highly protected articles.—E. P. TOMLINSON, Rosemont, N. Y.

EDITOR AMERICAN FARMER: In your issue of Feb. 15 I notice a paragraph in which I take exceptions, written by Joseph T. Miller in reply to Mr. Kiet. He asks: "How low does he want prices; does he wish the goods given to him as hundreds of others who voted the great reform ticket, and are being sustained by the charity of those who did not?" Investigation proves quite the contrary that reformers in Kansas, are in fair condition, and it's a well-known fact that the immensely rich and exceedingly poor, especially negroes, are those that did not vote the great reform ticket. We are not ashamed of our cognomen "haves-not," but rather proud of it, as it distinguishes between humanity and inhumanity.

You make a strong statement; you say that the income tax is a delusion and a snare; that rich men simply will not pay it. A pretty pass we have come to. Query: What is the difference between an anarchist and a State in which the laws are not efficient and men do what they please?

"Fools are bound to come," possibly. But why? Now, that seems to me like a ridiculous proposition, made to hoodwink the people. I don't see any valid reason in the midst of prosperity for having a panic. Haven't we increased our wealth \$1,000,000,000, and boast of being the richest people on earth, and yet be subject to panics. Rats! The greater the prosperity the more certain is failure.

I am inclined to think you have an interest in a sheep ranch. A high tariff seems to be your pet. Your answer to free traders is that \$400,000,000 that we spend for farm products. Do you know that we sold to other countries, after deducting our own people, \$1,000,000,000 worth of farm products with a money of the world gold? What is the use of a tariff? When it the 50-cent wheat that brought gold back into this country last year? When the necessities of some other Nation compel them to have gold, they will underbid us, and away will go our gold. We must compete with the pauper labor of Europe and India in the wild scramble for gold, and the cheapest goods will get it.—W. K. HULSE, Manhattan, Kan.

THE QUESTION OF TAXATION.

EDITOR AMERICAN FARMER: In your paper of Feb. 15, 1894, I see some statements that it seems must have been made without weighing their importance to the taxpayers. I shall copy a few extracts.

"Every neighborhood furnishes evidence of how successfully rich men evade such plain, straightforward taxes as those on lands and goods."

"It is the middle-class people who pay the taxes, and the wit of man has never devised a way in which the very rich can be compelled to pay their share."

"Two or three years ago the Board of Assessors in New York City reported that after making all deductions, there was \$1,500,000,000 worth of personal property that should pay taxes."

"They actually collected on \$225,000,000, or something over one-seventh. This meant that the people who had a few thousand dollars' worth of personal property paid their taxes in full, while those who had millions employed skilled lawyers and took other means to avoid paying."

Now, I would like to know if this is all true. Is it possible that the enormous

sum of \$1,275,000,000 escapes taxation in New York City? If the tax rate on this money be only one per cent, there would be the sum of \$12,750,000 more taxes collected.

If this is not a gigantic wholesale robbery of the masses of New York City, then let us know just what it is. Yet we are told that "the State of New York has probably the best-executed tax laws of any State in the Union, except Massachusetts." Then I pity the States, or the taxpayers of those States, that have the poorest-executed tax laws.

If the ingenuity of man cannot frame a law to compel these rich robbers to disgorge every dollar they owe the public in any equitable tax law, then it would seem that it is about time that American tax payers took these gentry in hand and taught them the first lesson in our National politics; viz., that it is every man's duty to be a law-abiding citizen, and that they are not unless they pay their taxes, as well as fulfill the other duties of good citizenship. If they will not heed this lesson it is a duty that the loyal, true tax payers owe to themselves and the poor, that a law be framed to punish these criminals against society. The thief who steals a few dollars is hurried to a State prison.

Who is there among honest taxpayers that does not regard the rich scamp who shirks from his duty by refusing to make a full schedule of all his property for taxation, as a far worse thief than the man who steals on a small scale?—J. A. GARDNER, Spring Grove, Va.

## THE WOOL TARIFF.

EDITOR AMERICAN FARMER: I have received notice that my subscription has expired and hasten to renew, as I like the ring of your tariff music.

I have before me President Cleveland's message of Dec. 6, 1887, in which he says the duty on wool is from 10 to 12 cents per pound, and it leaves the farmer's hands charged with precisely that sum.

The next Spring after Mr. Cleveland's tariff message, I sold 1,705 pounds of wool at 13 cents; of course, I got at least 10 cents per pound tariff, according to Mr. Cleveland, but sold my wool rather low—low enough to suit the most fastidious free trader. Before that time I had been getting from 18 to 20 cents.

Wool is very low, and I am reducing my flock, and have about 200 head of medium grade of wool.—J. O. SLATER, Independence, Kan.

## WINES AND BRANDIES.

An Interesting Struggle Before the Senate Finance Committee.

A powerful French lobby has been laboring with the Ways and Means Committee of the House and the Finance Committee of the Senate, in favor of French wines, brandies, and fruits. This is headed by M. Brunet, of Chicago, the Consul-General of France to this country. Other members are M. Leon Clouet, the delegate of the Paris wine and brandy manufacturers, and W. G. Knowles, formerly United States Consul at Bordeaux, and now the agent of a syndicate of Bordeaux wine and brandy houses. They have been assisted by the New York Wine and Spirit Traders' Society, who have sent here their President, Chas. McK. Looser. The result of their labors so far has been to secure a reduction in the Wilson Bill of the duty from \$2.50 to \$1.40 a proof gallon, but they want it still lower, and have been laboring with the Senate Committee to effect this. They have been resisted by the California State Agricultural Commission, which has sent here its Secretary, Mr. Charles A. Wetmore. Senator White, of California, recently appeared before the Committee, and made an able argument in favor of his constituents. He has shown to the Committee that the American tariff on spirits is lower than that of Great Britain, Canada, Australia, and many other countries, and that the proposed reduction would benefit no one except those engaged in manufacturing spurious compounds.

Incidentally he has called the attention of the Committee to the peculiarity of the French tariff, which is what might be called a double tariff system, viz., a general high tariff against all the world, and a special or minimum tariff granted to favored countries. The United States is excluded from French markets in all its exports except raw material and a few unimportant exceptions. The French, however, are treated in this country on the footing of the most favored nation.

American wines, alcohols, raisins, nuts, etc., as well as cotton, machinery, wagons, stoves, and other manufactured articles, are taxed from 20 to 50 per cent. higher than similar products of England, Germany, Switzerland, and certain other countries.

In 1891 the French grape crop was almost a failure, and large quantities of wine—\$7,000,000 worth—were imported from the United States; but this was stopped the next year by a French tariff, which discriminated strongly against United States products. After giving figures showing the remarkable fluctuations from year to year of the grape crop, Senator White said:

"It is plain to see that in articles such as wines commerce is subject to extraordinary fluctuations of prices, and that under an ad valorem system importations would take place principally in years of large production and be in bond for years, if necessary, to be sold when prices rise; and those who have speculated on the former low prices can hold the markets against all future importations, because under the law the ad valorem rate is fixed in accordance with the value at the time of importation, and not at the time of withdrawal from bond. Under such circumstances the wine trade would be at the mercy of speculators, and the revenue collected would not be in accordance with value at all. After holding such wines without tax for three years in bond the speculator would pay in accordance with the bankrupt values of surplus stocks of three years preceding, whereas the importer who would desire to bring in fresh lots of the same class of goods, which had been kept in the meantime in foreign countries, would pay many times as much tax."

"There is a well-known industry in certain French ports in preparing artificial and adulterated compounds, both of wines and spirits, for such foreign markets as admit the same without proper care for the interests of their own citizens. Such products are forbidden to be sold in the French home market, but special facilities are afforded for selling the same in foreign markets."

## Make Paper from Hops.

The production of paper from the hops waste in breweries is being considered in Germany. The oil in the hops is a hindrance, which, it is claimed, is now overcome, and it is expected that papers can be made, by using hops, at a cost of 50 per cent. less than heretofore.

## KANSAS FARMING.

## A Variety of Practical Subjects Discussed by Practical Men.

The annual meeting of the Nemaha County (Kan.) Farmers' Institute was held at Oneida, Jan. 17, 18, and 19.

The first subject,

## "FRUIT GROWING,"

was presented by Mr. Avery, who for 15 years has followed the fruit business in this County, and now has 36 varieties of apple trees in his orchard. Said he would confine his remarks principally to the apple crop, as all kinds of small fruit are known to do well. Nearly all of his 36 varieties did well for six or seven years, but later experience has led him to consider many of them, including Winesap, Missouri Pippin, Genet, Rambo, and most of the Russels undesirable. Recommends Duchess of Oldenburg for early apple, Maiden Blush for Fall, and for a sweet Winter apple the Kansas Sweet. This variety resembles the Ben Davis as to form and color. For general reliability, satisfaction, and profit plant Ben Davis first and all the time. Would plant at least 40 feet apart and always lean trees well to the southwest, to protect trunks from hot, autumnal sun. Favors cultivating the orchard until well grown, raising hard crops, such as potatoes, beans, or sweet corn, then stock down to clover. Has found low headed trees as liable to sun scald as higher ones; therefore, prune young trees about four feet. Never set young apple trees where old ones have died out; plant peach or cherry, if any.

In cherries, Mr. Avery recommends Early May or May Duke and Early Richmond, and as to plums, he advises planting the wild plum, prairie plum, or varieties of old ones. "Creek," and he says "you will have plums every year." Thinks the orchards of the country have for the past three years been suffering with a specific disease, which, while he does not altogether understand it, is a kind of blight, and has about run its course.

Mr. Cox plants winter onions about his apple trees for protection against the hot sun and insect enemies; finds it a good plan.

## "POULTRY ON THE FARM,"

by Mrs. J. L. Marshall, was listened to with interest. She keeps 100 hens of the Plymouth Rock variety. Income last year, \$90.

Mrs. N. Coleman also gave figures proving that she makes poultry on the farm a success. Mr. Avery keeps several varieties of chickens. Prefers White Plymouth Rocks for all purposes. Says they are more docile and better layers than the Barred Plymouth Rocks. Recommends highly the feeding of bone-meal, and says the hatchet is a sure cure for cholera.

Wm. Brinkworth: Mix some Venetian red in feed and water about every two weeks, and you will have no cholera.

E. G. Ward says a corn diet favors cholera. For laying qualities, he prefers White Leghorns.

J. L. Marshall wets up slackened lime, lets it dry, crumbles, and feeds for cholera. Also, feeds pulverized chinaware and crushed stone.

## SMALL GRAIN.

A brief, pointed paper on "Small Grain," by B. Schoeller: Plow early, not too deep. Harrow thoroughly; no danger of getting land in too fine condition. It should be left, but firm. Do not get that land must be left rough to hold the snow in winter. Sow the last of September with press drill, not over one inch deep, one and one-quarter bushels good clean wheat.

Outs—Sow early, three bushels per acre; Red Tussock variety on cornstalk ground; cultivate deep both ways and harrow well. Has a theory that oats put in when the ground is too wet is more liable to rust.

D. S. Coleman prefers to sow when land is quite moist. Thinks the oat stalks lying over the ground help hold moisture, and that one thorough cultivation is sufficient.

"THE MOST PROFITABLE HORSE TO RAISE" was the subject of a paper by G. C. Sanford. He says study the market and breed in accordance with its requirements. Thinks the active, stylish, high stepping horse weighing 1,200 or 1,300 pounds is most useful on farm and road. Don't sell off all the old ones. Favors March pigs, as they have a good start when clover starts. Don't attempt to grow hogs without clover pasture. Young stock need some grain in connection with clover.

Feed shorts and bran in connection with corn. Never let pigs get hungry, and allow them to grow from pigchew to market. Middle of September to first of December is the best time to feed, and they should weigh 250 pounds at nine months old. Prefers May pigs to feed in connection with cattle.

President Fairchild: Patiently should be always ready for their feed, and always resting between meals.

Mr. Tingle said he was formerly engaged in the milling business, and found that hogs fed on slops made of barley meal and mill feed did better. Better feed barley to hogs than make beer of it.

## TOBACCO.

Dr. S. Marlock, Jr., read a paper on "The Tobacco Habit." Says the physician in his battle against pain finds frequent and important use for the narcotics. The Virginia weed is responsible for the general prejudice against narcotics.

Use of tobacco is an acquired habit, which is in no wise essential to happiness. All authorities agree that its use by children and youths is very injurious, though not agreed that its use by adults tends to shorten life.

This paper was roundly applauded.

President Fairchild said that students of Yale and Harvard smoke, as a rule, yet no smoker has ever held first place in scholarship.

John McCoy gave an instructive talk on "PASTURES AND MEADOWS."

For permanent pasture there blue grass the most reliable. It comes early and stays late. Good pasture is necessary to the production of good milk. Only two varieties—timothy and clover—in general cultivation for pasture and meadow. Timothy being a bulbous plant, does not stand dry weather or close pasturing as well as clover; hence is not as good for the summer pasture. Seeds with hard grain on them, and in harvesting grain leaves a high stubble for protection.

President Fairchild said that on the College farm at Manhattan they use a mixture of orchard grass and clover, both for pasture and hay. Only two varieties—timothy and clover—in general cultivation for pasture and meadow. Timothy being a bulbous plant, does not stand dry weather or close pasturing as well as clover; hence is not as good for the summer pasture. Seeds with hard grain on them, and in harvesting grain leaves a high stubble for protection.

Prof. Carothers, of the Oneida High School, read a paper on

## "THE NEEDS OF OUR PUBLIC SCHOOLS."

Thinks there should be greater harmony among those interested in school work. Education makes the man morally, mentally, and physically. Is not like milk—cream on top. Must go to the bottom in order to get the cream. There is lack of system and a surplus of useless apparatus. The pupil should not be allowed to neglect those studies in which he

work, taking charge of the roads over a whole township.

## "THE FUTURE OF THE CATTLE INDUSTRY"

was the subject of a carefully-prepared paper by Hon. W. J. Bailey. Thinks it depends largely upon the general prosperity of the country, and of the workingman in particular. Without work or wages the workingman is a poor customer. For years the papers have predicted a cattle famine, with consequent higher prices, but the turn in this direction has just been made. The best animals he has ever fed were a straight cross between thoroughbreds, Hereford or Galloway, upon Shorthorn. On an average the feeder should have 25 cents per month per animal to make a profit, though much depends upon the quality of the animal. Takes about six months to finish the storage steer, and he will eat about 75 bushels of corn in that time. Doesn't pay the average farmer to feed for export trade, as it is a business that must be learned, and ordinary cattle are too uneven for purpose. As a rule, cattle should be sold as soon as ready, as they will be kept at a loss.

John McCoy, Shorthorn breeder, is encouraged by the fact that his best animals now go into the hands of live farmers.

Harry Zahn thinks the feeding of some oil-meal causes cattle to eat more corn and fatten faster. (We think the increased gain is probably due to the tendency of the oilmeal toward a balanced ration, rather than in the quantity of grain consumed.)

The question of calves having been sprung, President Fairchild said there is more in the man than in the breed.

## CORN GROWING.

Harry Zahn read a paper on "Corn Growing." Put the land in the best possible order and plant good seed at the proper time, in order to get a good stand, which is one of the main points. Favors the lister, but on rolling land would list and plow alternately. Fall plowing, cultivate or disc, then list four inch deep and harrow before planting with the two horse planter. If dry, plant deep; if wet, plant shallow.

Pick seed corn when husking; large straight ears with small cobs. Begin cutting early with harrow or disc. Use cutaway disc. Cultivate deep first time, then not so deep.

Col. Shinn opposes the lister. Thinks listers cause the land to wash. Wishes all the listers could be gathered together for one place and burned with fire. Thinks farmers should cultivate corn later in the season.

D. S. Coleman explained that when listed each furrow carries off its own water, a comparatively small quantity, and the danger from washing is scarcely more than in case of plowing.

Ben Schoeller recommends deep cultivation of the land followed by shallow listing, leaving top of ridge in such shape that it will collect and absorb water, instead of shedding it into the trench. Thinks listed corn is very often overwatered when too small.

J. O. Barnard says he can during a period of 10 years grow an average of 10 bushels per acre by listing than by top planting.

President Fairchild spoke in favor of the lister, but recommends the practice of both systems on the farm.

Mr. Worley says that in growing large varieties it is a good plan to top plant a few acres for seed, as it will mature sooner than when listed.

Mr. Robertson says he is experimenting with seed corn kept in the cellar where it will never freeze.

President Fairchild, of the State Agricultural College, delivered a fine address on the subject of

## "SPECULATION ON THE FARM."

The welfare of farming demands that we put aside speculation outside of the farm. The most successful speculation is that which looks most to the development of the power within the farmer, and the most successful means to the higher development of those intellectual, moral and spiritual qualities which are essential to true success.

True success demands study and steady growth, and the future in the light of the past, seen only low prices for his products. Hired help, which he wants is hard to get and high-priced. The price of grain is low, and he sees no money in raising grain at present prices, and will perhaps come to the conclusion that it will pay him better to rent his farm.

The farmer that rents land thinks he can see, as he looks the future in the face, higher rents, low prices for the products of his labor, hard work and little for it, and thinks the outlook very discouraging. But if we turn and look at other branches of business, we see our mines, mills and factories silent and empty, thousands of idle men clamoring for work, and none to be had, and in consequence none less suffering for the necessities of life.

The present outlook for the farmer may not be encouraging, but have we not reason to be thankful? We have never yet seen farm laborers in this condition, and don't hear of farmers breaking up and compromising with their creditors by paying 25 or 30 cents on the dollar. The farmer suffers in consequence of the bad markets, and not from the necessity to economize, and perhaps put off the intended improvements he had in view; but, after all, thinks there is a great deal of truth in the remark that "farmers are the most independent class of men in the world"; that the low price of farm products are caused by closing of mills and factories, and the fear of unwise legislation; believes America should consume American products, and that America should manufacture everything that Americans need. I want it so that the whole world should declare war against us, and we were surrounded by walls of cannon and bayonets and swords, we could supply all human wants in and of ourselves. 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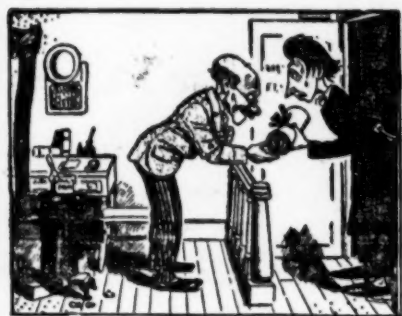




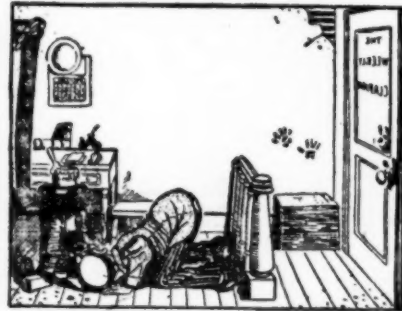








Poet (entering)—I would like to leave this poem in the hope that you will be able to use it. Good day."



The Editor—Able to use it? Well, I should smile!



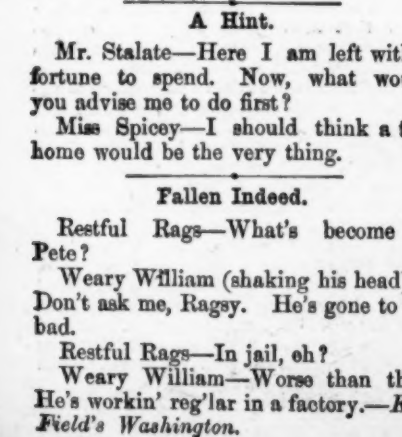
The Editor (writing)—Mr. T. Emerson Gibbs—Your poem is accepted, and will be paid for on publication. We would like to add that there is more poetic warmth in these verses than in any we have received lately.—Puck.



Uncle Mose—Was you up to de chu'ch dis mawnin', Ephra'm? Ephra'm—I was dar. Uncle Mose—What was de tex? Ephra'm—De tex 'was dat de rich man shabber jump thro' de eye ob de caymel 'less he hol's a needle in his han'. Uncle Mose—What de rich man want de dat, foh? Ephra'm—I doan' know, Uncle Mose; but dat was de tex.—Judge.



Farmer Freezeout—Now, I'd jest like to know what you men bought this here tract of land for, even at two dollars an acre? The thermometer ain't much above freezin' nine months in the year, and I've 'most starved ever since I owned it. Mr. Cyndicate—Why, certainly, my good man. We intend to boom it into a Winter resort for fashionable New York invalids.—Puck.



Mr. Stalate—Here I am left with a fortune to spend. Now, what would you advise me to do first? Miss Spicay—I should think a trip home would be the very thing.



Restful Rags—What's become of Pete? Weary William (shaking his head)—Don't ask me, Raggy. He's gone to the bad. Restful Rags—In jail, oh? Weary William—Worse than that! He's workin' reg'lar in a factory.—Kate Field's Washington.

## NATIONAL DAIRY CONGRESS.

## An Earnest Meeting, Resulting in Good.

A convention of delegates from the various State dairy associations of the United States was held in Cleveland, O., on Feb. 7 and 8, pursuant to a call issued in October by the Superintendents of Dairy Exhibits at the World's Fair from the various States. A permanent organization was effected, and the following Constitution adopted:

## CONSTITUTION.

Article 1.—This association shall be known as The National Dairy Congress.

Article 2.—The object shall be to promote the dairy interests of the United States and elevate the standard of all its dairy products.

Article 3.—The National Dairy Congress shall be composed of two delegates from each State dairy association and one delegate from each Experiment Station that conducts dairy experimental work. Provided, that in those States where no State dairy association exists, the Governor may appoint two delegates, who shall be practical dairymen.

Article 4.—Each State dairy association or Governor, as provided in Article 3, may appoint two delegates to attend the annual meeting to be held in the year 1895, one of which shall continue for two years and one for one year. Each year delegate (beginning with the year 1896) shall be elected by the State dairy association, or, if no such association exists, by the Governor.

Article 5.—The officers shall consist of a President, Vice-President, Secretary and Treasurer, who shall constitute the Executive Committee.

Article 6.—The President shall preside at all meetings, except in his absence, when the Vice-President shall be the presiding officer. The Secretary and Treasurer shall perform the duties usual to those offices in like organizations.

Article 7.—The Executive Committee shall have power to transact all business it may deem necessary, which was not done at the annual meeting.

Article 8.—In all meetings of the National Dairy Congress each State shall be entitled to three votes to be cast by their delegates present.

Article 9.—Each State sending delegates shall pay annually \$20 for their dairy association or department of the State, and \$10 for each Experiment Station, as dues for the expenses of the National Dairy Congress.

Article 10.—All officers shall be elected by ballot at the annual meeting and hold their offices for one year, and until their successors are elected and qualified.

Article 11.—All vacancies shall be filled by the Executive Committee until the next annual election.

Article 12.—This Constitution may be amended at any annual meeting by a two-thirds vote of all members present.

Officers were elected as follows: President, H. M. Arms, Springfield, Vt.; Vice-President, J. T. Hickman, Experiment Station, Ohio; Secretary, D. P. Ashburn, Gibson, Neb.; Treasurer, H. L. Gibson, Iowa. These four officers constitute the Executive Committee.

The following resolutions were adopted:

"WHEREAS this Congress recognizes the importance of the home dairy as being the primary condition of the dairy industry in all new and sparsely settled communities, of necessity going before and forming the basis of all subsequent co-operative work: Therefore,

"Resolved, That the National Dairy Congress will, in all legitimate ways, encourage the establishment of dairy schools, and in all judicious ways use its influence to carry light and help to the isolated dairy farmer.

"Resolved, That we view with favor the introduction of the dairy industry in all new and sparsely settled communities, of necessity going before and forming the basis of all subsequent co-operative work: Therefore,

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## The Convention.

THE AMERICAN FARMER takes great pleasure in printing in full the Constitution of the National Dairy Congress. This paper was one of the strongest advocates of such an organization. Nothing, as it has often indicated, but the most determined, concerted effort on the part of the leading dairymen of this country can withstand the machinations of the oleomargarine and butterine fraud perpetrators.

They have behind them large capital, and their agents are, for the most part, experienced, keen business men.

Too long the dairymen have dallied, waiting for someone to go ahead.

If the dairy exhibit at the Fair did nothing else it at least gave prominent dairymen a chance to get acquainted with each other, and talk over their unprotected rights.

There is no resolution more potent for good, if lived up to, than the one alluding to legislation.

No industry in America, involving the use of so much brains and capital as the dairy interest does, goes unprotected. And the very fact that, in spite of neglect and indifference on the part of our law makers, it has prospered, and drawn into it some of the best and most talented men in America, merely shows what it may and will become in the near future when properly cared for by judicious legislation.

Only Two Years.

Among other interesting points touched upon in a recent address made by President Dennison before Iowa State Dairy Association, he spoke of the introduction of bacteriology into the experimental work of the dairy.

For only two years have the workers been equipped with proper material and apparatus to warrant fruitful and exact results. During that length of time great effort has been made to conduct the work of the Station and factories on a commercial basis. Exactly the same care and precision has been used in the collection and use of materials as if the promoters were interested in a woolen or boot and shoe factory.

Appliances have been purchased and invented to promote investigations; new discoveries have been promulgated, and no sooner have means been furnished to teach the dairymen how to do, than laws have been passed specifying what not to do.

Iowa stands to-day well at the front of the dairy ranks, and too much credit cannot be given to her pioneers in this line.

A Needless Waste.

Bulletin No. 22 recently sent out from the Iowa Experiment Station contains some articles of unusual interest.

Prof. Henry C. Wallace gives the results of months of study in churning, his especial attention being directed to the ripening of cream. His object was to save the butter fat lost in skim-milk and butter-milk.

Samples of butter-milk were collected from creameries and private dairies over the State, and it was found that in some cases one-third to one-half of the butter was being lost in the skim-milk and butter-milk. This loss in the State of Iowa alone amounts to several million dollars a year. He found that much of the loss in the butter-milk was due to improper ripening of the cream and inability on the part of the butter-maker to use the cream as regards ripeness.

We accept with thanks its assurance of co-operation and wish it God-speed in the work it has undertaken.

"Resolved, That we extend the hand of fellowship to our sister organization, 'The National Dairy Union,' which has been organized for the single purpose of procuring National and State Legislation to protect the dairymen of the United States against the sale of counterfeit food products made in imitation or semblance of pure butter or cheese.

We accept with thanks its assurance of co-operation and wish it God-speed in the work it has undertaken.

"Resolved, That the thanks of the National Dairy Congress are due, and are hereby extended, to the representatives of the various newspapers who so kindly reported the proceedings and materially aided in the conduct of our sessions."

The Executive Committee were instructed to take such steps as they may deem necessary to urge upon all members of Congress the passage of the Hill Bill, Senate bill No. 1376.

Also, to collect and promulgate all available information tending to show the cause and character of the diseases of dairy animals in all parts of the United States, together with the means of prevention and cure, and to this end communicate and co-operate with the Bureau of Animal Industry at Washington, and the various Experiment Stations.

Also, to take such steps as in their judgment will best secure the purity of all dairy products and elevate the standard thereof.

Also, to request each State dairy association to annually report to the National Dairy Congress, through its Secretary, on the following points:

1. What measures of a National character does your association feel the need of and desire to have the National Dairy Congress bring before the public?

2. What National legislation will benefit the dairy industry in your State?

3. What dairy legislation has been passed in your State during the past year?

4. What laws have you in your State that are directly beneficial to the dairy industry?

5. What measures of a National character does your association feel the need of and desire to have the National Dairy Congress bring before the public?

6. What special lines of experiment would be particularly useful to your association?

7. What is the general system of conducting the meetings of your association? Are they entirely of a literary character, or are they usually connected with exhibits of dairy products and supplies?

8. In what particular branch of the dairy business are your officers personally interested? Whether dairymen, creamerymen, cheesemakers, experimenters or supply dealers, etc.

9. Have you tried any new methods of conducting your meetings; and if so, with what success?

The Executive Committee were further directed to perfect a plan whereby any person may be entitled to such publications as the committee may from time to time be enabled to compile from the information gained as to diseases—their prevention and cure, and with any valuable knowledge which they may be in possession of pertaining to the dairy industry, and to fix some compensation therefor whereby the committee could secure sufficient funds to enable it to prosecute their work.

The committee in pursuance of these instructions desire to announce to the public that any person who will remit \$2 to L. C. Gabrielson, Treasurer, at New Hampton, Iowa, will be entitled to all the benefits of a subscriber.

The time and place of holding the next annual meeting was left to the Executive Committee.

The Congress adjourned subject to the call of the Executive Committee.

D. P. ASHBURN, Secretary.

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Cullings.

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A force pump with brass cylinder and plunger giving 25 or 30 pounds pressure is the best for spraying insecticides and fungicides. The spray should be fine and well distributed.

Slightly damp moss should be kept among them. Tie each kind carefully in a bunch by itself and label. A little shriveling will not hurt them, but too much will make them worthless.

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London purple and Bordeaux mixture sprayed on a plum tree once before the bloom, once as the petals were falling, and twice afterward, 10 days apart, produced a good crop of fruit. The tree had, on account of curculio, rotted seriously for many seasons, and the leaves were affected with blight, which disappeared after the spraying.

The condition of the soil, whether wet or dry, has everything to do with the success of an orchard, and elevation or slope comparatively little. There have been cases where trees on bottom land and on a hillside of the same farm did equally well, and bore to the same age.

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Plant such apples as are known well, and are popular in the markets. The varieties will of course be largely influenced by the section in which the orchardist lives. The Baldwin, Rhode Island Greening, and Northern Spy are suited to the latitude of Michigan and western New York. These are not satisfactory farther south, as a rule, as they ripen too early, and decay.

During the pleasant weather seasons for grafting may be cut and laid away. It is not good for the tree to cut them in freezing weather. If you have only a few, bury them in a dry place in the garden. They must not be too dry, nor yet too moist. If kept in a box, they keep better when there is a large quantity together.

VALUE OF THE APPLE AS FOOD.

It Contains More Phosphorus Than Any Other Fruit.

Chemically, the apple is composed of vegetable fiber, albumen, sugar, gum, chlorophyll, malic acid, gallic acid, lime, and much water. Furthermore, the German analysts say that the apple contains a larger percentage of phosphorus than any other fruit or vegetable.

The phosphorus is admirably adapted for renewing the essential nervous matter of the brain and spinal cord. It is, perhaps, for the same reason, rudely understood, that old Scandinavian traditions represent the apple as the food of the gods, who, when they felt themselves to be growing feeble and infirm, resorted to this fruit for renewing their powers of mind and body. Also the acids of the apple are of signal use for men of sedentary habits, whose lives are sluggish in action, those acids serving to eliminate from the body noxious matters which, if retained, would make the brain heavy and dull, or bring about jaundice or skin eruptions and other allied troubles.

Some experience, says the *Southwestern Clinic*, must have led to our custom of taking apple sauce with roast pork, rich gosses, and like dishes. The malic acid of ripe apples, either raw or cooked, will neutralize any disposition to gouty deposits engendered by eating too much meat. It is also the fact that such fruits as the apple, pear, and the plum, when taken ripe and without sugar, diminish acidity in the stomach rather than provoke it. Their vegetable sauces and juices are converted into alkaline carbonates, which tend to counteract acidity.

I would have stations for feeding the calves in, and would leave them in stanchions until they had finished their grain ration. Stable them the first and second Winter, and keep no more than you can properly care for, and you will have cattle when coming three years old that will be as good if not better than the average four years old.—R. G. MARTIN, Greene County, Iowa.

EDITOR AMERICAN FARMER: The first thing I would recommend in this line would be the selection of good stock to breed from. And the choice must depend upon the purpose for which a farmer wishes to raise them, whether for feeding purposes or the dairy. In either of these lines I would recommend the best selections of high grade cattle. The farmer that makes a success of raising cattle must care for them in the proper way. One reason we have not been more successful in raising better grades of stock and keeping them up to a fair standard is because we undertake too much, and not taking the time to give the proper attention that should be given to the raising of calves. For instance, we have felt that we were compelled by circumstances to convert all of our time and everything we can into money to meet obligations that we feel in duty bound to meet.

So far as I can I would have the calves dropped in February or March, have a good warm place for them, well bedded, and kept perfectly clean and properly ventilated. Teach the calves to drink milk and not run with the cows, feed new milk for one month and then skimmed milk, but do not let it stand too long before skimming. Learn the calves to eat shelled corn and oats mixed. Turn the calves in an open yard when the days are warm. Give them plenty clover hay. Keep up the feed of milk, and when grass comes have a separate pasture for the calves.

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